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Original Paper

Exploration and Analysis on the Historical Remains of Wooden Fence in Koguryo Mountain City

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Abstract

The mountain city is the one that is built as a kind of fortifications in the mountains by Koguryo people. This kind of city is widely distributed in the region of China's Liaoning Province, Jilin Province and the northern part of Korean peninsula.

Currently the Koguryo mountain cities seen in China are mostly stone-built and earth-built, and some are stone-and-earth mixed construction. This is because its regime's early land is located in the mountains, and the use of stone is a native aboriginal tradition, but the later occupy is the plains, so the choice of building material became the earth according to local conditions.

Recently, the author has found that there are some remains of the wooden fence in some small mountain cities, whose defense system are built by contacting the stone with the wooden fence, during the survey on the mountain city in Liaoning Province. The wooden fence should be an important part of the fortifications of the Koguryo mountain cities, and the cave stone relics previously discovered should also be related to this.

Keywords

mountain city, wooden fence, Liaoning Province

1. Introduction

The mountain city is a precious material cultural heritages of Koguryo nation, which has a necessary relationship with its own historical and cultural characteristics. Because the fighting has been frequent throughout the history of the Koguryo regime, the Koguryo people used the mountain city as an important means of defense against foreign enemies. Within the territory of China's Liaoning and Jilin province and the northern region of the Korean Peninsula, a large number of mountain cities are built to form a unique defense system. With the development of the regime, Koguryo mountain city is also

changing in terms of location, wall-building methods, stone processing. The study of these related issues is of great significance to the study of the history and culture of Koguryo. However, due to the limitation of archeological data, the research on the construction method of the mountain city mainly focuses on the construction methods of stone building, earth building and earth-rock mixed building.

In recent years, with the increase of the archeological data in the Korean Peninsula, the research on the wooden fence which works as a part of the fortifications has gradually drawn the attention of relevant scholars. However, the relevant material of the wooden fence in China is very limited, which makes the related research restricted. Recently, during the survey on the mountain city in Liaoning Province, the author found some remains of wooden fence in some of the small mountain cities, whose defense system are built by contacting the stone with the wooden fence, the wooden fence should be an important part of the fortifications of the Koguryo mountain city, and the cave stone relics previously discovered should also be related to this.

2. The Remains of Wooden Fence in Eastern Part of Liaoning

2.1 Heyang Temple Mountain City

Heyang temple mountain city is located in a corn-shaped dwarf mountain, two kilometers away from northwest of Zhengtun village, Gaizhou. Its altitude is 100 meters and the mountain is relatively flat. The mountain city is high in the north, low in the south, and the flat is slightly rounded square. The city walls' construction is combined with two ways of low stone walls and stone walls with low stone. The remains of stone column is located in the middle and north section of the western wall of the mountain city.

Based on different ways of building the western wall can be divided into three sections:

The first section is the southern part of the western wall. It is an about 220-meter long stone wall, and the mountain is slightly steep and rises step by step. The mountain city built the inner and outer wall by the local processed stone which was shaped into a size of about 20cm × 30cm, and filled gravel in the middle of the wall for reinforcement. This is the typical city wall construction style in the late Koguryo regime, and it's about a 110cm-120cm width. The existing part is only about half a meter high, and part of the wall remains only a layer of stone, less than 30cm high.

The second section is the middle part of the western wall. It is a large stone wall base, nearly 90-meter long. About 200 meters up along the west wall, the mountain slows down, and the wall body stands directly on the mountain in the form of simple processed or unprocessed large stones. Those stones are 55cm-58cm high and 47cm-57cm long, and formed into two rows of low stone wall base inside and outside. The width between inner and outer stones of the wall is 42cm-44cm, and did not fill soil between them.

The third section is the northern part of the western wall nearly 100-meter long. This part of the wall is near the top of the mountain, located in the spread and gentle ridge near the west door, and the

difference of height between the ridges is small. From the north to the south the wall is about 110-meter long, and the stone wall base was made up by the simple processed small stones, large unprocessed stones and huge stones. The small stones are about 40cm-55cm high, 53cm-37cm long. The width between inner and outer stone row is about 40cm-44cm. The west door of the wall connects the outside ridge of the valley, for the mountain is flat and open, and the defense pressure is great. The Koguryo chose large or huge stone to construct the defense system. The large stones are 71cm-110cm high and 110cm-120 cm long, and the width between the inner and outer wall is 50cm-55cm, and those huge stones are nearly 2-meter high and directly cut out 32cm-40cm base groove to distinguish the inner and outer wall.

2.2 East Fenying Mountain City

The construction style of Heyang Temple Mountain City's western wall is not the isolated example of the Koguryo mountain city, the East Fenying mountain city is also adopted the similar construction method.

East Fenying mountain city located in a mountain about 160 meters above sea level is in the east of Fenying village, Yangyun town, Gaizhou City. Its southern wall is built by the local stones and two kinds of masonry methods are adopted. It is located on the top of the ridge and more than 400-meter long. Due to the steep mountain near the door, the wall from the west valley mouth towards more than 200 meters south, was built by the simple processed stones as inner and outer wall, and filled gravel and small stones in the middle. Now the remains are 30cm-50cm high and 100cm-110cm wide.

As the ridge gradually becomes widening and flat, and the defensive pressure eased with being away from the gate, the construction of the southern wall becomes a similar way with the second part of the western wall of Heyang temple mountain city. The inner and outer walls are respectively divided into two columns by natural large stones about 60cm in height and 8cm-100cm in length. The distance between the two columns is 50cm-55cm, and there is no filled wall core between the two columns of stones inside and outside. The height of the native stones is the height of the wall base.

2.3 The Relationship between the Low Stone Wall and the Stone Cave

From the point of the architectural form, the place that settled low stone wall base is located in a flat hillside and connected with the stone columns and stone wall should be an important part of the Koguryo fortifications. From the data, the distance between the two columns as the wall base is similar to that of the cave in the mountain wall in China.

In China, the remains of the stone cave are mostly on the top of the wall and close to the inner wall of the parapet wall. From the point of remains, the stone cave, the wall and the parapet wall are designed and built together as the defense unit. In the process of building the wall, built the stone cave first and then built the parapet wall. At present, the study of the stone cave mainly includes the Roller Element Stone Theory (Note 1), the Ballista Theory (Note 2), the Wooden Fence Theory (Note 3) and so on. In the study of Chinese scholar Zhao Junjie, Liang Zhilong, Li Xinquan and so on pointed that to set up

pillars in the stone cave, and to combine wooden fences, plank, wooden pole, and etc together, could highten the parapet wall and improve defense capabilities. I trust that this view is more close to the historical facts.

In addition, it should be noted that there are slab stones on the east wall of Wunvshan Mountain city covering the stone cave, and it indicated that the stone cave was not a commonly used facility, but should be the basis of the defensive facilities available in wartime. The Old Tang Book contains the description of Li Ji's attack towards the Koguryo mountain city, it says that, "ordered Li Ji to attack its west and used the trebuchet and impact cart to damage its city wall, the Koguryo used the wood as fence immediately". That is to say the wooden fence and its basic facilities have already existed, or it could not be set up immediately. It also means that the wooden fence should be a kind of timely and effective backup defense facilities used by Koguryo during wartime. Judging from the stone cave which has been discovered so far, they mostly exist at those key areas where there is a large defensive pressure, which is exactly in accordiance with its extremely high probability of the wall damage. After the city wall was destroyed, by setting up the wooden fence promptly, the defenders quickly built a new complete defensive unit and put off the attacks of the enemy.

According to this, it can be speculated that the remains of the stone columns should also be the infrastructure of wooden fence, and they were on the ridge and were not used in peace time, but they can expand the horizon, and are easy to lookout. During the battle, erected wooden planks between two stone columns could play the role in increasing the height of walls, barriers and blocking enemy's attacks and defending shooting. On the other hand, the stone wall combined with the wooden fence is shorter, which is only equivalent to the size of the parapet wall of the tall mountain city, and the situation of the walls and the mountain body formed a whole defensive system is more obvious, and the function of the wooden fence is more prominent.

3. The Remains of Wooden Fence in South Korea

The situations where the wooden fence set in the mountain area of South Korea are different. The remains of the wooden fence in this region take more forms of pits and post holes, currently found in the mountain city in the small mountain located in Hankang River Basin. The post holes like in the first and second fort in Red-violet Peak and the forts of Zeng Peak have been stated to be the wooden fence column by the evacuation report. (Note 4)

Red-violet peak fort 1: on the south side of the small peak with 117.8 meters above sea level situated in Gwangzhuang Hole, Gwangjin District, Seoul city, it is slightly oval with the perimeter of 120 meters. After the second excavation, it has been confirmed that there exist stone walls, water storage, drainage facilities, etc. A large number of Koguryo pottery, tile pieces, iron, etc. have been unearthed. In the six excavation sites, 31 pillar holes have been found, with a diameter of 70cm-80cm and depth of 50cm-70cm. In some of the pillar holes, the remains of the pillars were still, with a diameter of

20cm-30cm. (Note 5)

The second fort of Red-violet Peak: It is located about 150 meters from northwest of the first fortress of Red-violet peak. It is a long oval with a circumference of 179 meters. After being evacuated in 2005, it has been confirmed that there are relics such as the wall, the drawn well, the reservoir, the rock train in bulwarks, the wooden fence, the drainage facilities, etc. The pottery and iron ware were unearthed. Eight cylindrical holes were found on the outside of bulwarks of the building site, with a diameter of 40cm-50cm and a depth of 40cm-70cm. The distance between them is about 1 m. (Note 6)

Zeng Peak fort: at a small peak with 205.8 meters above sea level in Jiaowen Cave, Guri-si, Gyeonggi-do, it is an irregular long oval with a circumference of 205 meters. After the fourth excavation, it has been confirmed that there are the stone wall, the horse face, the site of the city, the storage facilities and other relics. A large number of koguryo iron ware and pottery have been unearthed. The size of the cylinder is varied with the change of the terrain, but the general diameter is 70cm-90cm, and the depth is 70cm-80cm, and the remains of the column are still preserved in some of the cylinder holes, with a diameter of 20cm-30cm. (Note 7)

In addition, Tangpu city in the Linjin River Basin, and the second fort of Yeoncheon-gun in gyeonggi, also confirmed the remains of the wooden fence.

It can be seen that the defense system with the combination of the stone wall and wooden fence is widely available on Korean peninsula in Koguryo ruling area and should be the traditional form of its defense facilities.

At present, there are few records about the design of wooden fence in the historical documents of Koguryo, but there are a large number of records in the Baekje Ji of the Samguk Sagi (Historical Records of the Three Kingdoms). For instance, in the first part of Baekje Ji, “in year eight (BC11), in the autumn July, Baekje built the Mashou city and set up the Pingshan wooden fence”. In the second part of Baekie Ji, “in year four (217AD) , set up two wooden fence at the city side of Shadao city, the distance from the east to the west is ten Li”. In the fourth part of Baekie Ji, “in the winter October(469AD), repaired the Shuangxian cit y and set up large wooden fence in Aoki ridge ”.

4. Conclusion

From the way the city is constructed, Heyang temple mountain city and East Fenying mountain city should be the small and medium-sized mountain towns built in the artery between south and north in the west bank of the Liaodong peninsula in the late period of koguryo. Heyang temple mountain city is stationed in the traffic line along Bohai Sea coast and East Fenying mountain city is lied in traffic line of valley floor of Fuzhou River which joins Bohai Sea. The two cities are not far from each other. They guard the two traffic channels in the same traffic respectively.

Heyang Temple Mountain City and East Fenying Mountain City are not 100 miles away from the Qingshiling Mountain City of Gaizhou. They surround and protect each other, should be the defensive

military positions. Only a few soldiers were stationed in this kind of mountain city which acts as the stronghold and fort during wartime at ordinary times. Koguryo in such a region built the wooden fence walls without spending much time and energy, which clearly fitted its military need better.

From the stone caves popular in early and late period on the top of the mountain city wall built with rocks to the pillar holes on the top of the small mountain city in Hankang River basin in the middle of the regime, late to the stone columns at the top of the mountain city located in Liaodong Peninsula plains, although the shape of infrastructures had been changing, the defense system in which the wooden fence and walls are belt together had always been used. It should be seen that Koguryo people chose to build palings at that special time period and region. It is an important part of Koguryo mountain cities to use the respective defense systems timely and properly according to the natural environment and the defense needs.

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Notes

Note 1. Museum of Fushun City & Culture Bureau of Xinbin County. Koguryo Mountain City of Heigou Xinbin County in Liaoning Province. Cultural Relics, 1985(2).

Note 2. Chi, Y. (1993). *Strategic Defense System of Koguryo Capital.Koguryo Research Anthology*. Yanbian University Press: Jilin

Note 3. Zhou, X. Y., Zhao, S. L., & Xing, J. X. (1993) *Chengzishan Mountain City*. Liaohai Cultural Relics.

Note 4. The Architecture of Koryo Fortress along Korea's Hangkang River. *Journal of Yanbian University (Social Science ed.)*, *12*.

Note 5. With 4

Note 6. With 4

Note 7. With 4